ing capacity suggests a loss of alveolar-capillary surface area (for example, emphysema). A normal diffusing capacity in the presence of airway obstruction suggests intrinsic airway disease. The specific type of airway disease may be defined by tantalum bronchography and pulmonary function tests in which airway resistance and maximal airflow rates are related to lung elastic recoil pressure. Finally, when all other pulmonary function tests are normal in an asymptomatic person, the "closing volume" may still be abnormally increased. This may indicate obstruction in the very smallest airways, less than 2 mm in diameter. If these different types of chronic obstructive pulmonary diseases can be detected early, preliminary studies suggest that therapeutic intervention may correct functional abnormalities; whether the disease itself is arrested or reversed remains to be seen.

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Corticosteroids in the Treatment of Adult Respiratory Distress Syndromes

WHEN PATIENTS have experienced prolonged shock due to sepis, hemorrhage, or following severe trauma, certain morphologic alterations in the lung are potential consequences. These may include intravascular platelet aggregation, sequestration of polymorphonuclear leukocytes with resultant release of lysozomal enzymes from these cells onto the pre-capillary arteriolar and capillary walls, and attenuation of pulmonary surfactant. These changes then lead to vascular constriction with leakage of plasma fluid into the pulmonary interstitial spaces. The end result of these well known changes is the development of functional alterations in pulmonary gas exchange characterized by progressingly increasing hypoxemia and hypocapnea. Some of these same findings have also been described in pulmonary aspiration, smoke inhalation, and fat embolism.

The administration of high pharmacologic doses of corticosteroids has been suggested as desirable in preventing progression of the morphologic changes in the lung. They are thought to be particularly helpful in shock due to sepsis or hemorrhage, in smoke inhalations, or in aspiration pneumonia. Whether or not they are truly effective in adult respiratory distress syndromes of all types has not been conclusively established.

In order to be effective, the following dosage schedules have been recommended: Methylprednisolone 30 mg per kilogram of body weight or dexamethasone 6.0 mg per kilogram given either as a single bolus intravenous injection or repeated every eight hours for up to 72 hours.

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Reversed Aorta to Saphenous Vein Grafts

WHEN THE CORONARY ARTERIES become occluded by atherosclerosis so that chest pain upon exertion, emotional reaction or after the ingestion of a large meal intervenes at regular intervals (stable angina) and does not respond to medical management, it is now an acceptable procedure to subject such patients to a series of studies including ventriculography and ciné coronary angiography. If they are found to be satisfactory candidates from all points of view, myocardial revascularization can be carried out by aorta-to-coronary vein grafting. Recent studies have indicated in-hospital mortalities of less than 7 percent throughout the country for single and double grafts and of 8 percent for triple grafts. Such experienced institutions as the Cleveland Clinic report a 1.2 percent mortality. Combinations with other revascularization procedures such as internal mammary-to-coronary anastomosis and internal mammary artery implantation have mortality rates similar to those of vein grafts alone, as does conventional coronary endarterectomies in certain selected cases.

Pre-infarction angina (Sampson's angina) is now also considered an indication for immediate myocardial revascularization. This differs from stable angina in that the chest pain lasts longer, has either not been present formerly or has changed in nature from its former pattern and is associated with transient changes in the T-wave

patterns and the ST segment patterns without evidence of Q-waves in the electrocardiogram combined with an absence of changes in the enzyme laboratory findings characteristic of damage to the myocardium.

Angina inversis, which has been associated roentgenologically with the presence of a single coronary arterial occlusion, particularly of the anterior descending or coronary spasm, and has the clinical picture of the patient awakening at night with characteristic anginal pain not present during the daytime, does not respond to coronary revascularization as do the other two types.

After myocardial infarction has occurred, revascularization procedures do not seem either to reverse the course of the evolution of the disease or to decrease the mortality rates. Hence they cannot yet be recommended except in certain select instances where excision of an aneurysm or closure of a ventricular defect secondary to the infarction will save an otherwise rapidly deteriorating situation.

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Drug Therapy in Asthma

DESPITE GREAT ADVANCES in the understanding of the immunology and other aspects of asthma, drug therapy remains the most important therapeutic means available for relief of bronchospasm. For treatment purposes it is convenient to consider several, usually distinct, clinical presentations of asthma: combinations of mild, severe, intermittent and persistent.

Mild intermittent disease responds well to almost any therapy including inhaled adrenergic drugs, oral adrenergic or aminophylline preparations or both, or the simple avoidance of precipitating factors. Mild persistent bronchospasm is best treated with oral adrenergic or aminophylline preparations; inhaled bronchodilators should be avoided in this condition. Cases of persistent asthma which do not respond satisfactorily to oral adrenergic or aminophylline preparations or to combinations of them are candidates for oral corticosteroids given in low dosage and preferably in short courses or, if necessary, for longer periods, every other day. The usual safeguards of tuberculin skin testing and evaluation of ulcer and diabetic potential must be followed before beginning corticosteroid therapy.

Severe and life threatening asthma is best treated in a hospital setting with large amounts of intravenous fluids, parenteral aminophylline, and costicosteroids in high dosage (but for a short period). Frequent blood gas analysis and capability for intubation are essential.

The Federal Drug Administration has recently released sodium cromoglycate for use in this country. Other promising drugs are salbutamol and terbutaline.

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Surgical Treatment of Hiatal Hernia

RECENT MODIFICATIONS in operations for hiatal hernia are based upon pressures and acid reflex studies that have shown that an essential part of the repair mechanism is: (1) the prevention of acid reflux into the esophagus and (2) the lowering of the gastro-esophageal junction below the diaphragm where, due to normal pressure relationship, it regains its sphinctorial function.

The Nissen fundoplication involves an infolding of the upper portion of the stomach around the esophagus for 2 or 3 centimeters. The somewhat similar Belsey operation constitutes a fundoplication around the esophagus without a complete circle being accomplished but still bearing the esophagus in a full 2 or 3 centimeter length of tunnel. Normally these procedures are carried out through a chest incision although surgeons skilled in upper abdominal operations can perform them equally well, with an upper abdominal incision reflecting the left lobe of the liver.

The Hill procedure involves gastroplexy of the esophageal gastric junction just below the arcuate ligament of the diaphragm, where the fibers of the diaphragm are tendinous in character, and this keeps the gastro-esophageal junction firmly fixed below the diaphragmatic crux. Concomitant vagotomy and pyloroplasty are added only in those patients who have had, in addition to the hiatal hernia, duodenal or gastric ulcers or an extremely high titer of acid reflux. Strictures of the esophagus resulting from hiatal hernia in a great